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ABSTRACT

This paper reviews the research carried out in New Zealand classrooms since 1967, including conference papers, theses and dissertations, published articles, and unpublished reports. Classroom research is defined as any work, irrespective of disciplinary affiliation, which is concerned with the actual day to day operation of classroom life. Review of the research is divided into six areas: (1) teacher/student/parent expectations: (2) teacher location, classroom participation, and classroom structure: (3) behavior modification: (4) achievement studies: (5) teaching strategies and student thinking: and (6) recent developments. The works are discussed in narrative form, with an appendix of the references. Future directions of classroom research in the United States, Great Britain, and New Zealand are identified, with the following anticipated developments noted: an increase in interdisciplinary and multilevel research: more emphasis placed on the teacher's frame of reference: the use of anthropological procedures as a result of methodological developments: a more flexible look at the criterion of effectiveness: and a growing worldwide interest in neglected variables in classroom research. (FG)

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Classroom Studies in New Zealand: Whence and Whither?

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This paper is an attempt to review the research carried out in New Zealand classrooms over the last decade. The coverage includes theses[1], published articles[2], conference papers and unpublished reports. As might be expected the majority of these investigations are the products of university-based research. However, we did actively seek information on research undertaken by Teachers College staff, government agencies and other parties. But in spite of all our efforts there are probably some studies we will have missed. As well, we had difficulty getting access to some of the studies we did locate. So the coverage, inevitably, is incomplete but, we think, fairly representative.

Before we begin the actual review, it is important to indicate the parameters for the field of research with which we will be dealing. There is no clearcut definition of what is and what is not classroom research. American social psychologists were amongst the first to approach studies in classrooms in a systematic way[3]. They soon became largely concerned with establishing systematic coding procedures for grouping observed behaviour in predetermined categories[4]. The initial category bases were related either to teaching technique (Barr, 1948) or to general typologies reflecting ideological commitments to democratic leadership or climate, to indirect approaches to instruction and to supportive and pupil oriented procedures. A further feature of many of the American category systems was the pervasive, often subtle influence of the stimulus-response learning paradigm[5].

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This systematic observation approach is commonly referred to as interaction analysis, a term which is frequently used interchangeably with 'classroom research'. British researchers initially used similar category schemes in defining classroom interaction but have recently developed a whole series of recording systems (Galton, 1979). As a consequence of the increased participation of sociologists, anthropologists and linguists classroom research systems have broadened dramatically from the initially *a priori* observer's approach. Although much of the American work remains segregated within individual disciplines and little dialogue exists between them, the British tradition is characterised by a much more interdisciplinary union, even though it has not always been an amicable one. New Zealand research has been influenced by both the American[6] and British traditions. Educational researchers in New Zealand appear to have been more influenced by the latter when it came to identifying with or communicating across disciplines[7]. However, it was often the American systematic procedures which became the preferred methodology and research style.

The foregoing provides a partial explanation of why we shall be using a broad-brush approach to the field of classroom research. We are interested in any work, irrespective of disciplinary affiliation, which looks at the classroom process. By that, we mean any work which has been concerned with the actual day-to-day operation of classroom life. We are not interested in input-output studies which treat the classroom as an unknown black box. On the contrary, it is tne daily life of the classroom (Jackson, 1968) which gives social meaning to the participants. Such an emphasis means that most of the work we review will be of the kind where researchers have actually spent time in classrooms observing what is happening. However, we will not limit our review to observation studies only. It is also possible, although somewhat more difficult, to obtain an understanding of classroom operations through questionnaires and interviews.

This paper will first present a discussion of a substantial corpus of the research which has been completed in New Zealand since 1967[8]. The studies will be divided into six main topic areas: teacher/parent/student expectations; teacher location, classroom structure and participation; behaviour modification; achievement studies; teaching strategies and student thinking; and recent developments[9].

Following the discussion is a review of trends in both America and Britain and some suggestions about the direction New Zealand research might take.

New Zealand Teacher/Student/Parent Expectation Studies

Ever since the landmark and controversial piece of research by Rosenthal and Jacobson (1968) researchers have taken an active interest in the expectations teachers have of their pupils (and vice versa) and the effects such expectations may have on subsequent interaction and achievement. St. George (1978) and Haigh (1973, 1974) both made this a central concern in their research. They observed teachers interacting with their pupils in regular classrooms. The interaction for Haigh was confined to discussion time immediately following a story which was read by the teacher, while St. George observed a variety of curriculum activities. In each case, trained observers recorded the interaction patterns between the teacher and those individual students whose potential the teacher had been previously asked to evaluate. The two studies provided data which at first glance appeared to conflict. Haigh reported that students who were regarded by the teacher as high performers received more primary question contacts and response opportunities than did those regarded as low performers. St. George found no significant differences between high and low expectation groups in the quantity of public or private response opportunities. However, when type and complexity of questions were taken into consideration, it was found that high expectation students received the more complex questions.

Ashcroft (1972) investigated the relationship between parent/teacher belief systems (i.e., about the treatment of children and the purposes of education) and interaction patterns between the teacher and student. In an attempt to understand the intricacies of a school situation where some students were regarded as problems by some teachers and not by others, he hypothesized that diverging parent-teacher beliefs about schooling could act to hinder teacher-pupil rapport. He found that where there was dissensus between the teacher and parent, even though neither knew the other's belief system, there was a higher incidence of negative sanctioning and positive directing by the teacher towards that student.

Wright (1969) and Pennell (1970) evaluated the nexus between pupil and teacher expectations. Through the use of questionnaires Wright evaluated teacher and student beliefs about the stimulation and motivation of pupils in a single high school. He found that students think teachers are generally more positive than negative and that they work harder for those teachers perceived as the most positive. Nonacademic students regarded teachers as being more negative. Pennell interviewed and surveyed teachers and students to compare their views on school life. He found the perceptions of teachers about student likes/dislikes to be accurate and observed that activities considered valuable by teachers were nevertheless infrequently offered. The one disparity between teacher and student perception was about which classroom problems might be considered the worst problems.

Smart (1977) was also concerned with teacher expectations and their effect on placement of low IQ students in special classrooms. She found that low IQ students are more likely to be transferred to special classrooms if teachers hold low expectations about their own ability to cope with such students.

Summary reviews of overseas studies (Elashoff and Snow, 1971) conclude that, generally speaking, teachers are accurate over time in their assessment of the academic abilities of their own students. Where inaccuracies are reported, they are more common in contrived situations (i.e., where false information about relatively unknown students is supplied). Furthermore it seems that there are expectations which are subtly conveyed and which can act as self-fulfilling prophecies. The New Zealand investigations tend to confirm such conclusions although it is noteworthy that the trend here has been to observe in naturalistic, on-going classrooms with little intervention. While the construct of 'expectation' gives some coherence to these reports, different explanatory theories are suggested. These tend to originate within social and educational psychology and in sociology. The interpretation made here is that there is a growing trend towards an interdisciplinary approach to expectation. Bates' (1977) argument that a role-theory view of expectation presupposes a static and hierarchical society and that some dynamic self-image (or attribution) view is needed to account for change is seen as relevant here.

Two further questions are evoked by a survey of the indigenous literature. What are the means by which expectations are communicated in classrooms? Has too much reliance been placed upon the study of interaction patterns in classrooms as the preferred way of attempting to understand expectations and their consequences?

New Zealand Teacher Location, Classroom Structure and Participation Studies

This field of study has been markedly influenced by the pioneering work of Adams and Biddle (1970), amongst the first researchers to introduce the use of videotape in the classroom. They postulated that the seating position of a student in the classroom relative to the location of the teacher had an important influence on the frequency of participation by that student. They further proposed that participation frequency would be positively correlated with achievement. McGregor (1974) used direct observation in four classrooms and found that teachers do, indeed, spend more time near the front rows of the classroom but that student participation was not affected by location. Bates (1973) videotaped two classrooms and found little evidence to support the argument that there is any relationship between location and participation, participation and achievement, or location and achievement.

Codyre (1973) compared a number of classrooms across two types of lessons, mathematics and social studies. He found that there were important differences between lesson types in the location of teachers, and content and level of verbal interaction. Gill (1977a, 1977b) investigated the effects of classroom architecture (various seating arrangements in self-contained classrooms and open plan vs conventional classrooms). He reported no significant difference between open plan and conventional schools in their interaction patterns. Although there was some effect consequent upon type of desk seating arrangement, this environmental effect was further compounded by class interactions i.e., the effect of change was dependent upon individual teacher's reactions.

The reports on teacher location have increased in complexity from descriptive accounts of teacher position and movement and associated participation patterns to those in which such other factors as sociometric group patterns, architectural and organizational features and curriculum have been added. The original investigations were undertaken during a period when teaching had been conceptually disentangled

from learning (Smith, 1960) and could legitimately be observed as the role-relevant activities of the members of a profession. Part of the increased complexity may be related to the difficulty of excluding intention and purpose from accounts of teaching. The construct of teacher location is clearly appropriate for a descriptive mapping of classroom events and where explanation is not the goal. Where explanatory theory is the goal other concepts (e.g., political power and territoriality) may be more useful.

New Zealand Research on Behaviour Modification

Since the New Zealand research on behaviour modification, to use the original term, is reported in a separate paper and since it also has a strong within-group similarity, it is expedient here simply to summarise the general trends, pointing out commonalities and incongruities. Nevertheless, it is important to include a sampling of these studies, for they are numerically predominant amongst the types of classroom research under consideration. For instance, 5 of 15 reports of classroom research to be found in the *New Zealand Journal of Educational Studies* belong to this genre. Furthermore, these reports demonstrate the impact which some individuals have in stimulating further research. Church at Canterbury and Glynn at Auckland are two, amongst others, who have provided leadership in this field.

In eight of the nine studies discussed in this section the researchers observed classroom behaviour and noted any changes which resulted from experimentally introduced reinforcement. The one study which was not concerned with observed behaviour (Ashe, 1971) focussed on test performance. Five of the eight observation schemes were interested in 'on-task' behaviour (Jackson, 1973; Roche, 1974; Glynn and Quinnell, 1971; Thomas and Adams, 1971; McNaughton, 1975). Two researchers observed a similar 'appropriate' behaviour pattern (Fry and Thomas, 1976; Adams, 1974) while the final researcher recorded rates of 'disruptive' behaviour (Ellery, Blampied and Black, 1975). Most researchers observed target students for a number of 10 second intervals and recorded whether they were on-task or off-task. Ellery, Blampied and Black divided the lesson into one minute intervals and observed whether any disruptive behaviour by students occurred during that time interval.

In most cases the research was designed so that students acted as their own control. In other words, a baseline period of behaviour was observed, a form of treatment was administered during which behaviour continued to be monitored, and finally a reversal period was observed where students were exposed to the original baseline conditions. In all cases in the research reported here the students were observed in their regular classroom settings[10]. The treatment usually consisted of positive reinforcement/praise by the teacher for appropriate or on-task behaviour. Off-task behaviour was usually ignored. In addition to praise, Thomas and Adams (1971) built in a system of class rewards, Fry and Thomas (1976) introduced a token economy and Adams (1974) offered peer reinforcement and praise by the principal. Roche (1974) compared the effects of individual versus group contingency, while Ashe (1971) and Jackson (1973) were concerned with the differential effects of self-reinforcement as opposed to teacher-reinforcement.

In another, Siepkes (1973) reported that improved conduct with one class of difficult pupils was sustained with the teacher who initiated the treatment, but did not appear to generalise to other teachers. In several instances researchers reported that improved behaviour stabilized even after reinforcement was withdrawn. Fry and Thomas (1976) suggested that token reinforcement was effective for extended periods after it was removed and even after the students were mainstreamed from their special class into a regular class. One research report (Thomas and Adams, 1971) suggested that behaviour improved for the control group as well as the experimental one, while yet another researcher (Jackson, 1973) reported that behaviour for his control group remained the same. Glynn and Quinnell (1971) found that praise of on-task behaviour worked equally well for well-behaved and poorly-behaved students. On the other hand, Roche (1974) noted that praise worked best for better students.

The behaviour modification studies initially revealed a concern with control in the 'good conduct' and 'on-task' senses. We note the emergence of a focus on the learning task itself. For example, among the recent reports one finds references to such learning tasks as reading performance (McNaughton, et al., 1979) and cognitive skill (Sass, 1977). Another characteristic has been the movement from other-provided to self-provided reinforcement, from the control of behaviour

by the teacher to pupil self-control. Parallel to this latter trend has been a move from a rather strict application of a technology to a less constrained view of the technology itself. This latter state may be better termed the applied analysis of behaviour than behaviour modification.

It may well be that these trends which are away from the earlier rather doctrinaire approaches, have been instrumental in furthering the classroom acceptability of the applied analysis of behaviour. Certainly the work of Glynn and his colleagues at Auckland and of Church and his students at Canterbury has made a major contribution in this direction. The development of notions of self control, self evaluation, and self reinforcement and of modelling (Bandura, 1977) point to the possibility of rapprochement between cognitive and self theories and applied behaviour analysis. But perhaps the moves to self-control and to 'liberalising' of the technology have contributed less to the burgeoning of such studies and to application of the procedures than has the pragmatic observation that behaviour modification 'works'. Given the near unanimous verification of the effectiveness of the procedures, as they are recorded in the literature, it is interesting to note that they are not used universally by teachers. There may be a need to look at the structural, ideological or other factors which make it difficult for classroom teachers to adopt such innovative methods or techniques.

New Zealand Achievement Studies

This group of investigations differed in the kinds of independent variables they employed, but all had the common goal of predicting achievement outcomes. Hughes (1972, 1973) was interested in the relationship of student response patterns and student participation on residual achievement scores. He experimentally created three types of teacher questioning patterns: random, systematic, and where students decided whether or not to offer a response. He found there were no differences in achievement as a consequence of questioning patterns. However, in observing student/teacher interaction he found that there was a significant difference in achievement between those who received positive feedback from the teacher and those who received none.

As a linguistic psychologist, Daniels (1975) researched the effects of teacher language patterns on student achievement. He tape-recorded social studies lessons in 14 different classrooms and analysed the transcripts of teacher monologues. He found that student performance was not affected by teacher questioning behaviour. He did report that content-relevant discourse produced better achievement and indicated that shorter units of discourse tend to be associated with higher levels of achievement. On the other hand, short sentences had a negative effect on achievement while moderately long ones had a positive impact.

Wright (1975) investigated the effect on student achievement of teacher experience and type of interaction within their classrooms. He observed three groups of teachers: experienced, student teachers with micro-teaching experience, and first time student teachers, and recorded their interactions with students during three pre-planned science lessons. He found that there was no difference in student achievement amongst the three teacher groups when IQ and previous knowledge were controlled. However, he did report four categories of teacher talk which had a significant impact on achievement: solicitation patterns, praise/thanks, revision, and solicitation directions.

Both McGee (1978) and Hunkin (1969) used inservice techniques in an attempt to alter achievement patterns. McGee introduced an inservice training programme to change teacher questioning behaviour and associated verbal interaction. He found that teacher questioning behaviour was altered by the programme and that there was some improvement in achievement, particularly with evaluative and divergent thinking. Hunkin evaluated the difference between a structured sequential teaching method and the more traditional familiarization approach, both of which were introduced in a six hour in-service training course. He reported that between inservice training courses there were no significant differences on student achievement. Nor did he find in analysing the videotapes of the teachers using these techniques that comments of particular kinds had the anticipated facilitating effect on achievement.

Archer (1970) investigated the relationship of students' cognitive styles and teachers' instructional methods on learning outcomes. He selected three cognitive styles (descriptive, categorical and relational) by a pencil and paper test and exposed two classes each to two different

instructional methods, rule-explained and rule-derived. An observation system revealed that rule-explained instruction produced more teacher-lecturing, less teacher-questioning and less pupil talk than rule-derived instruction. He found that students introduced to rule-explained instruction had higher initial learning and higher retention, but there was no difference in transfer. He reported no interaction effects with cognitive style and instructional method.

The cluster of achievement studies (sometimes classified as process-product studies) continues a long search in education; one branch of this research has been named 'aptitude-treatment-interaction' (ATI) research and owes much to the impetus of Cronbach (Cronbach and Snow, 1969). This group of studies, like the applied analysis section, is concerned with 'improving' rather than just 'describing', often uses experimental or quasi-experimental approaches, and often involves a measure of intervention rather than the less intrusive observational style of research. Although, in general ATI studies have produced no clearly established set of individual difference variables that interact with defined treatments to produce certain achievement or other outcomes, they have underlined both interaction and complexity as characteristic of classroom learning. Linearity in the statistical models, unidirectionality in treatments and simple association as a basis for explanation are all found wanting in comparison.

At the same time some commentators, for example, Hamilton (1977) question the assumptions and appropriateness of the experimental model which underlines much of the research. They suggest each classroom is a unique combination of actors and social constructions. Church (1976) remarked on the difficult-to-define but nevertheless powerful effect of each class of pupils as a unique social group. What is manipulable and to what extent that manipulation accounts for a significant proportion of variance is both a theoretical and an ethical question, which is yet to be resolved.

New Zealand Teaching Strategies and Student Thinking Studies

This selection of research documents is influenced by the work of Nuthall and his associates at Canterbury (Nuthall, 1962; Nuthall and Lawrence, 1965). Their work has, in turn, been influenced by Smith and his colleagues at the University of Illinois (1960, 1962, 1967). The researchers

in this group were interested in the logical structure of the teaching process and its effect on student thinking.

Pearson (1969) investigated the relationship between evaluative discussion as a teaching strategy and its effects on cognitive interaction between teacher and pupils. He dichotomised the classrooms into direct and indirect and looked at the influence of the two on cognitive interaction. He reported that direct teaching methods were connected with 'restrictive' content and that indirect teachers use more evaluative terms and covered a greater range of evaluative content. The implication was that the restriction of evaluative discussion by direct teachers provides, ... impoverished opportunities within socialization and logical processes.' (1969:161).

Francis (1971) experimentally manipulated the teaching strategies for two nature study lessons; the first emphasized the content of the topic (i.e., pupil learning), while the second focussed on thinking about the topic (i.e., pupil thinking). He observed behaviour in eight classrooms across both conditions. He found that teachers were able to produce more thinking in the lessons when this was their intention. However, this emphasis in thinking did not have any impact on short term learning or transfer of information. He did, however, find a marked difference in the teacher's behaviour between the two levels observed, Standard 3 and Form II. Form II teachers lectured more and summarized the ideas of their pupils more frequently. Standard 3 teachers were much less consistent in their teaching behaviour.

Brooker (1977) was concerned with uncovering the strategies used by students in the learning process and with testing their relationship to retention of the learned material. He used in-depth interviews with 44 students and uncovered three major strategies: selectivity (note-taking), self-questioning repetition, and pictorial imagery. He found that antecedent variables (IQ and reading comprehension) had more of an impact on retention than did any of the learning strategies.

Rogers (1975) probed the question of whether the introduction of new teaching strategies would alter teacher performance and, in turn, whether changes in teacher strategies would have an impact on students' responses and levels of thinking. He observed and recorded interactions

during the discussion of a reading lesson. An inservice training course was designed to alter teacher strategies. He evaluated student thought processes on a seven point scale and found there was a significant difference between classes for both low and high level thought categories.

MacLean's (1977) research question differed from the others in this section. He asked what were some of the factors influencing the attending behaviour of teachers. From a sample of thirty-five teachers, eight were studied more intensively using direct observation in addition to paper and pencil tests of attending style, an attitude scale, and biographical data. The *Gestalt Completion Test*, used as an indicator of a holistic attending style was related positively to observed teacher behaviour and to a number of teacher biographical variables. The index of attending behaviour was based on observed teacher responses. Holistic rather than analytic attending, and responsive rather than initiating behaviour seemed typical of this teacher group.

The work of Katterns (1979) and Church (1976) is noteworthy for both compass and thoroughness. Church manipulated specific teaching moves (e.g., question type and sequence, teacher response and reaction) while controlling other moves in a standardized set of lessons. The use of only one specially trained teacher across classes and lessons allowed for rather precisely specified variations and the evaluation of quite detailed consequences in lesson analyses and learning outcomes. Katterns, too, employed a relatively sophisticated experimental design with different forms of micro-teaching (including the use of different media, different 'pupil' groups, different question types and various treatment combinations), observation analyses of teaching and the regular pre-service principles of teaching courses. The multi-coding of observations, the goal of flexible and sensitive teacher use of questioning, and the many faceted approach to variables and combinations of variables demonstrated in both studies is a measure of the extent to which recent research attempts to recognise the subtlety and rich variability of classroom life.

The strategy/thinking studies are particularly process oriented. Process studies raise the problem of degree of inference, be it high or low (Rosenshine, 1971) and the related question of validity. The reports reviewed here all addressed this issue, often through reference to the consistency with which observations matched the theoretical models employed. In contrast, low inference studies present fewer validity and reliability problems; they

also tend to have restricted compass and generalizability. The issues of generalizability and validity are highlighted by the growth of the case study as a preferred method. Implicit in each of the five sections reported here are assumptions about criteria either of outcome or effectiveness. The strategy/thinking form of classroom research emphasises cognitive processes or criteria. The research surveyed here re-emphasises the complexity of classroom relationships. While the studies have, in the main, been concerned with the effects of teacher strategies on student thinking, it is likely to be equally important that consideration be given to the effects of student thinking on teacher strategies, of student strategies on teacher thinking, and of teacher thinking on student strategies.

Recent New Zealand Developments

The work of Munro (1976, 1977a, 1977b, 1977c, 1978) offered a refreshing change from the largely psychological, quasi-experimental, empirical work which characterized most research reviewed in this paper. Munro is a social anthropologist whose theoretical orientation is derived from a social construction of reality perspective (Berger and Luckman, 1966). He argues: 'That which someone consistently thinks of his(her) life in a given context is to him(her) the reality of that life'. (1977b:1). He has recently been involved with two projects, *Enquiry-Based Teaching* (Munro, 1976) and its successor, *Classroom Monitoring* (Munro, 1977c). Both projects have sought to help teachers learn more about student perceptions through the use of a classroom visitor who talks with the students about their classroom lives and feeds the information back to the teachers. The basic rationale behind such an approach is that to make improvements teachers need to know the consequences of their teaching patterns. Student opinion is regarded as the best source of information[11].

Data collection for Munro is usually in the form of audio and videotape recordings. He edits transcripts of classroom conversations with both students and teachers as a basis for case study analyses[12]. These edited excerpts provide the basis for drawing conclusions about life in this particular classrooms. Munro is hesitant to make any generalizations from his 'data' since he argued that the structure of teaching and learning is so idiosyncratic. Nevertheless, his work does reveal a number of interesting points.

In his first project on enquiry-based teaching, Munro documented three basic aspects of classroom life: teacher aspirations, classroom activities and pupil comments on those activities. His 16 teachers defined enquiry-based teaching as pupils carrying out independent study of a topic individually or in small groups. He found six pupil requirements for effective enquiry-based programmes:

1. An expectation that enquiry-based activity is legitimate and worthwhile.
2. They have the necessary skills to obtain and process information related to the question being asked.
3. There is access to necessary sources of information.
4. The teacher trusts that the pupil will carry through an investigation independently.
5. There is sufficient security in the classroom to use it as a base for initiating enquiry.
6. There are sufficiently long periods of time to establish continuity in projects.

The most difficult stumbling block was the first condition; students and parents felt that school work and learning were about facts and that the students' own enquiries were just a form of play.

The goal of the latter project on *Classroom Monitoring* has been to explore ways of helping teachers make use of their students' knowledge about classroom life. Munro devised a monitoring system so that teachers could cooperate with one another in obtaining information about students' perceptions of their classrooms. He has developed an inservice training manual (Munro, 1978) which outlines how teachers can implement monitoring procedures and what results to expect. He suggests that such an evaluation system has the positive effect of breaking down the sense of professional loneliness and improving teachers' awareness of the consequences of their teaching.

The one major qualification one might make of this otherwise excellent work is that it fails to make any reference to what teachers can do with the information after it is collected. Conscientization is useful in its own right, as Middleton (1979) suggests in her phenomenological interpretation of the teaching role, but is it enough to change behaviour?

Another promising new tangent in classroom research has been taken by Freyberg (1979) and Haigh (1979) in their preliminary discussions about the relationship between teacher intentions and actual decision-making during the course of a lesson. They were interested in knowing to what extent

teachers change their intentions and just what factors seemed to provoke these changes. Freyberg raised some of the theoretical and methodological issues concerning purposes, intentions, and plans of teachers. Haigh suggested four basic data collection procedures for gathering such information and discusses some of the problems associated with them. No data from teachers has yet been reported.

A further classroom-based research project recently initiated is the *Learning and Science Project* (Osborne, Freyberg and Tasker, 1979), which is concerned with the teaching and learning of Form I to IV science. In its exploratory phase the project is undertaking an evaluation of the philosophy of the curriculum, a content analysis of the curriculum, and a survey and observation of the learning environments. Both methodologically and substantively, this research programme promises to be important to practitioner, curriculum designer and educational researcher alike.

An evaluation of year one teachers has also been started at Dunedin Teachers College (Harper and Maxwell, 1979). Their preliminary paper reported the findings of a baseline year of recent graduates in the teaching profession. They evaluated their performance by observing teacher behaviour in four basic categories:

1. The level of student activity and participation.
2. The questioning style of the teacher.
3. The degree to which interest is being stimulated.
4. The flexibility and clarity of organization.

This baseline will be used to compare results with the first year BEd. students who will begin teaching next year. We see evaluation studies of different kinds occupying a more central place in Teachers College research.

Teachers and Classroom Research : The Eternal Problem

Nuthall (1978) has offered several reasons for the communication gap between teachers and researchers. He suggested three aspects of the problem:

> Teachers do not see how the information provided by the research can guide their work, they do not find the information they do understand either credible or more convincing than their own common sense, and they do not see why they should spare any effort to do something about it.

The four reasons he offered in justifying the reactions of teachers to the research findings are cogent. First, the research procedures and statistical models are regarded as inadequate or inappropriate (Hamilton, 1977). Second, the knowledge gained from conventional research is rarely of the kind that can be used by teachers (Elliott, 1976). Third, researchers as a group are not seriously committed to the problems of day by day classroom teaching. Fourth, it is difficult for teachers to overcome the conservative pressures which oppose change of any kind.

We suggest that there are still other factors limiting the free flow of research information. A specific language problem is manifest with the operational definitions employed in conventional 'normal' research. The gap between the participant and the observer frames of reference is not bridged with ease. A further positivistic trend in research has been to assume that the teacher or the teaching method is the independent variable and that student behaviour is the dependent variable. Such an assumption may not be consistent with a teacher's perception of classroom life. The symbolic interactionist position places teacher and pupil more equally in balance. Teachers, themselves, often talk as though they are more responsive than initiating or directing.

A second major group of factors relates to the theory-practice distinction which has become part of the folk-lore of teaching. It is as if teachers are pointing out that the researcher's reality of abstracted concepts and categories, placed as a template over the on-going life of the classroom, is of a different order from their reality of experience and engagement. For instance, Elliott (1976) has tried to identify the practical constructs of teachers and to consider them as hypotheses for classroom research. Such an approach seems to make sense to the practitioner.

Those who wish to undertake research in classrooms are more aware than ever of the complexity and pace of classroom life, of the interdependence of variables, of the ethical and practical problems of intrusion, and of the multi-level nature of the teacher's tasks. One senses a genuine desire to share data, procedures and tentative conclusions with teachers. At the same time, there are for the researcher some pointers which raise questions about the kinds of advice often given teachers and the kinds of comment made about classrooms. For example,

the research on questioning indicates that the simple-minded exhortation for teachers to ask more 'high-level' questions is often not helpful, because so much depends on cognitive context and purpose. Church (1976) found that asking questions in random sequence made little difference to learning outcomes. Codyre (1973) reports that while an average of three questions a minute could be recorded, there was great variability both between teachers and with the same teacher across time.

The classroom interaction patterns, are both more varied and subtle than Flanders' system could indicate. St. George (1978) and Katterns (1979) demonstrate that expectations, purposes and communication networks influence interaction patterns in ways which cannot be captured by frequency counts or simple sequences based on a one-level view.

It is noted that the content-matter providing the cognitive setting for classroom studies has, almost without exception, been confined to certain curriculum fields - mathematics, science, reading and social studies. It is rare to find studies of the less structured fields of art, drama, literature and aesthetic activity generally. If certain models of teaching are implicitly linked with certain subjects, then one must wonder whether the researcher's selection of subject is also an indication of his(her) model of teaching.

How might this hiatus between practitioners and researchers be overcome? There are many possibilities: translations as in the *set* publication produced by NZCER, changes in methodology from the conventional agricultural models to anthropological ones, changes in focus to learning as experienced rather than teaching as observed - and so one could go on. One trend which is emerging both here and overseas is for a cooperative development in which the teacher is seen as a research colleague and where the participant's reality is acknowledged and where theory and practice are seen as a false dichotomy. This is one likely direction for future research in New Zealand.

Perspectives and Directions

Classroom research in New Zealand has been primarily the domain of those with a psychological perspective; sociologists have, in comparison, been

much less visible. The situation was similar in the earlier work in Britain and America but more recently sociologists have taken an active and stimulating part in research in classrooms (Delamont, 1976; Boocock, 1978). Changes in the orientation of each discipline have been evident during the last ten years.

The sociological perspective has been influenced by the recent work of symbolic interactionists and exchange theorists who underline the complexity of classroom events. The social system of the classroom is an intricate web of inter-relationships, linked at many levels and in many directions, with each member influencing and being influenced by each other member[13].

Educational psychology has been released from the positivism of Watsonian behaviourism, from the shackles of a misused system of psychometrics and from the constraints of a particular experimental methodology. The growing interest in ecological psychology, in attribution theory, the rediscovery of cognition in learning, of meaning and understanding, and of unobtrusive observation as a powerful procedure, have all provided a new impetus.

Cohen (1972) suggested four facets of sociological inquiry which are of direct relevance to educational researchers. First, there are the studies of the school as an organisation, studies which report wide variability in instructional activities and which consequently and necessarily minimise the chances of systematic relationships with student behaviour and learning. Second, there are the studies emphasising the inequality of the impact of teacher on student. Third, there are the studies of important status systems affecting pupil behaviour. Rosenholtz and Wilson (1979) suggest that academic status is important, having its roots in the structural features of the classroom. Sociometric status, as Wilson (1979) documents, interacts with other status categories. Finally, sociological studies have explored the teacher's role as a bureaucratic figure in the school with authority to control and evaluate student behaviour. This control function often takes precedence over other goals.

Cohen's observations suggest that there may at present be no point in pursuing a goal of a grand theory of teaching, or indeed of learning. It may be more profitable to break the intricacies of classroom life into smaller, more manageable units.

Educational psychologists have also found it more realistic to construct limited theories such as mastery learning exemplifies. Because the research has been so diverse, however, no coherent body of conclusions can be found to organise the field. The difficult path is avoiding the trap of reductionism and the seduction of grand theory.

Some of the work through the sixties and into the seventies reflects an enchantment with observational category systems which then multiplied as though generating a life of their own. There was, too, a tendency for some to charge off into a research arena armed with pragmatic tools and enthusiasm. A consequence was a multiplicity of studies using freshly devised instruments which thereby led to a lack of commonality and generalizability across studies. While much of the work was descriptive, a more or less hidden curriculum of ideological commitment did at times substitute for conceptual clarity and theoretical coherence.

There were also a number of strengths in the growth of appreciation of classroom complexities, in a recognition that correlation provides no explanation and in an increasing questioning of procedures and instruments. One valuable outcome of the research in behaviour modification was the realization that a research method and a technology could be demonstrably useful and that statistical sophistication was not a necessary concomitant of good research addressed to significant questions.

Amongst anticipated developments we would suggest the following: first, a continuation of the emerging rapprochement between disciplines and theoretical orientations is likely to lead to interdisciplinary and multilevel research, perhaps using teams. A critical member of many such teams may be the participating teacher colleague. Social psychology, individual psychology, sociology and anthropology are now it seems less bounded by dogma and academic protectionism. The possibilities of convergence and cooperation have been increased markedly as has the possibility of a breakthrough from current conventions to new paradigms.

Second, there are likely to be more studies which attempt to get inside the teacher's frame of reference. Such studies would be concerned with teachers' beliefs, perceptions decision-making processes and conceptions of various subjects. (Clark and Yinger, 1977)

Third, methodological developments are likely to lead to an increase in symbolic interactionist, case study and similar anthropological procedures. The educational psychologist's interest in perception, cognitive processes and human learning may be reoriented to take greater account of social, situational and ecological conditions. This third area in which the social construction of reality may become an important theoretical stance (even a new orthodoxy?) raises questions of relativism, generalizability and validity. Language and context will be critical components in any reporting of such work.

Fourth, a gradual release from narrow views of accountability is likely to encourage a more flexible look at the problem of the criterion of effectiveness. Certainly one may anticipate more open and confident dialogues between teachers and researchers, amongst proponents of different disciplines, across supporters of different methodologies and theoretical perspectives, and amongst the participants in the processes of education and of inquiry.

Fifth, there are already signs, both overseas and in New Zealand, of a growing interest in a number of the variables which have been somewhat neglected in classroom research. The *Science Learning Project* is exploring the student's understanding of certain salient concepts which may affect the learning of equivalent scientific constructs. Student perceptions, students as teachers, and students as analysts of teaching have also recently received increased attention. Time, as a variable, has received more sophisticated analysis as 'academic learning time'[14] or 'opportunity time' in comparison with 'observed time-on-task'. The nature of the learning task has similarly been re-examined. Doyle's view of classroom activities encapsulating teaching objectives, Glaser's focus on the psychology of subjects (c.f., the sociology of knowledge) as well as the distinction between the choice and demand characteristics of learning tasks all contribute to a less simplistic view of life in schools than the earlier research presupposed.

Finally, there are the on-going research questions of criteria, of alternatives and of coherence. The criterion problems of evaluation and accountability tend to be based on assumptions of predictability of outcome, and in turn of a measure of determinism. But is education so predictable? The alternative perspectives, for instance within the discipline of sociology, are exemplified by the debate about what functionalists would call 'the socialisation process' and what conflict theorists would call 'the allocation function'

itself related to the concept of legitimation. Different disciplinary orientations, different ideological commitments and different research paradigms make for a lively dialogue and diversity. At the same time the search continues for some way of providing coherence and integration to the wide range of discrete pieces of research. The search is illustrated by debates about the forms theories and models of teaching might take, about the value of meta-analysis (Glass, 1978) as a statistical method of coordinating research findings, and about the potential of a case studies[15] file as basis for future theory and guiding principle. Each of these attempts to bring about order out of diversity suggests another challenging route to new syntheses.

Footnotes

1. Our major source of information for thesis review has been the collection of titles collated by Pickens (1975, 1976a, 1976b, 1979). We have limited ourselves to M.A. and Ph.D research only, recognising that there are an increasing number of diploma investigations worth further review at a future date.

2. There have been over 200 articles published in the *New Zealand Journal of Educational Studies*, of which only 15 were classroom studies.

3. See Chanan and Delamont (1975) for an excellent review of the historical development of classroom research.

4. Among the few outstanding exceptions to this generalization are Smith (1968), Jackson (1968), Kounin (1970) and Barker (1963). Only relatively recently have participant-observation and similar approaches received positive support from the community of classroom researchers, most of whom were trained in the conventions of systematic observation.

5. Even though Flanders' use of 'indirect' appears to echo the reflective technique and the indirect counselling advocated by Rogers (1969), the notions of initiate and respond, solicit, structure and react have clear S-R affiliations. Taba (1966), using a Piagetian cognitive development framework, could not avoid using the learning constructs of generalization and discrimination.

6. Flanders (1964) had a particularly strong influence initially since he developed much of his interaction analysis in New Zealand classrooms while he was on a Fulbright fellowship.

7. An indication of this interdisciplinary approach is the fact that New Zealanders tend to refer to themselves as 'educationalists', allegedly more interested in education than in any single discipline.

8. Other reviews of classroom research include the work by Campbell (1968), Nuthall (1968), Archer (1975) and Freyberg, Haigh and Katterns (1975).

9. The classification into six topic areas is one that emerged as appropriate to the main emphases in the wide range of New Zealand reports which were read over several months. Other groupings (e.g., Egglestone, Galton and Jones, 1975; Doyle, 1977) have been used in reviews of British and American studies. Each is, no doubt, legitimate in its context, and appropriate for the reviewers' purposes.

10. For three groups the 'regular' classroom setting was a special class (Thomas and Adams, 1971; Ellery, Blampied and Black, 1975; Fry and Thomas, 1976).

11. Munro's work has been influenced by the *Ford Teaching Project* at the University of East Anglia (Elliott and Adelman, 1975).

12. The report on the Hillary College Whanau unit (1977a) is an excellent example of his style. He has also written a large number of case studies of individual classrooms during the *Enquiry-Based Teaching* project.

13. Theory may be used to help guide the researcher toward particular aspects of interaction for further focussing or theoretical insights may emerge from the observation. This latter view, often known as grounded theory, has recently been advocated for New Zealand classrooms by Battersby (1979).

14. The *Beginning Teacher Evaluation Study* undertaken by staff of the Far West Laboratory for Educational Research and development has used academic learning time as an important variable. Timing is seen as a factor in determining the effects on learning of such other variables as praise. (e.g., Resnick, 1971).

15. See, for example, the work of scholars at the Centre for Applied Research in Education, University of East Anglia.

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